Changing the Paradigm: Treating Tobacco Dependence as a Chronic Disease

The ACCP Tobacco Dependence Treatment Toolkit, 3rd Edition

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Disclosures

- Most of what I am presenting today is from the ACCP Tobacco Dependence Treatment Toolkit 3rd Edition
- I am one of the contributors to the toolkit
- I want you to get and use the toolkit.

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Disclosures

- Research Support
  - National Institutes of Health

- Other Support
  - Associate Medical Director for Chronic Conditions, Texas Children’s Health Plan
  - Editor, Pediatric Asthma, Allergy, & Immunology (Mary Anne Liebert, Inc.)
Why is it important for pediatricians to treat parental tobacco dependence?

- To reduce the risk of the child becoming tobacco dependent
- To prevent and/or treat the child’s second hand smoke related illness
Tobacco dependence is a COMMON pediatric disease

- Tobacco dependence starts in childhood and adolescence (1)
- 20% of high school students report smoking in the past 30 days (2)
- Each day in the US (3)
  - 3,900 children 12 - 17 years smoke their first cigarette
  - 1,000 children become daily cigarette smokers.

3. Results from the 2008 National Survey on Drug Use and Health.
Nicotine has multiple effects in the brain

- Dopamine: Pleasure, appetite suppression
- Norepinephrine: Arousal, appetite suppression
- Acetylcholine: Arousal, cognitive enhancement
- Glutamate: Learning, memory enhancement
- Serotonin: Mood modulation, appetite suppression
- \(\beta\)-endorphin: Reduction of anxiety and tension
- GABA: Reduction of anxiety and tension

Cessation of Nicotine Use

- Subnormal release of dopamine and other neurotransmitters
- Deficient dopamine responses to novel stimuli
- A state of malaise and inability to experience pleasure
- The nicotine-induced changes in the brain are likely to be long lasting
  - persistent craving
  - risk of relapse persists for years after stopping smoking
  - even a single cigarette can result in a return to compulsive tobacco use

Nicotine withdrawal symptoms:

- Cravings for cigarettes
- Irritability, frustration, anger
- Increased appetite
- Tremors
- Dysphoric or depressed mood
- Insomnia
- Anxiety, Restlessness
- Difficulty concentrating
- Slowed cognitive performance
Tobacco smoke triggered asthma behaves differently

- Smoke + asthma $\Rightarrow$ decline in lung function
- Smoke + Respiratory Virus $\Rightarrow$ Severity
- Smoke $\Rightarrow$ Oral and Inhaled Corticosteroid Responsiveness

If you can treat asthma you can treat tobacco dependence

- **Goal of asthma therapy:**
  - Normal lung function
  - Minimal to no asthma symptoms

- **Goal of tobacco dependence therapy:**
  - Normal brain function
  - Minimal to no symptoms of nicotine withdrawal
If you can treat asthma you can treat tobacco dependence

- **Controller Medications**
  - Nicotine Patch (OTC)
  - Bupropion (Rx)
  - Varenicline (Rx)

- **Reliever Medications**
  - Nicotine gum, lozenge (OTC)
  - Nicotine inhaler, nasal spray (Rx)

- **Severity of disease guides intensity of treatment**

- **Pre-medicate for at risk situations**
Reach agreement on goals of therapy

- **Asthma:**
  - No cough/wheeze
  - No attacks
  - No exercise limitations
  - Near normal lung function

- **Tobacco Dependence:**
  - No craving
  - No withdrawal symptoms
  - Near normal brain function
If you can treat asthma you can treat tobacco dependence

- On follow-up
  - If disease is well controlled
    - Step down medications
  - If disease is not well controlled
    - Evaluate for triggers, adherence, etc.
    - Consider stepping up medication
  - Medications are adjusted based on control of the underlying disease -- not on a fixed timetable.
Treating Tobacco Dependence: The AARMR Model

- **ASK** about smoking and smoke exposure
- **ASSESS** the disease
- **RECOMMEND** treatment
- **MONITOR** for effectiveness and side effects.
- **REVISE** the treatment plan
ASK

- **Second hand smoke:**
  - Does anyone who lives with (name of child) smoke?
  - Does anyone who provides care for (name of child) smoke?
  - Does (name of child) visit places where people smoke?

- **Active smoking:**
  - How many of your friend’s smoke?
  - Have you ever tried (name of tobacco product)?
  - How many times have you tried (name of tobacco product)?
  - How much do you smoke?
Assess

- Level of Tobacco Dependence
  - Faegerström Test for Nicotine Dependence
  - Modified Faegerström Tolerance Questionnaire (adolescents)
  - Hooked on Nicotine Checklist (autonomy over smoking)
- Co-morbid conditions
  - Psychiatric conditions
  - Medical conditions
- Previous experience with smoking cessation
## Classification of Tobacco Dependence Severity

<table>
<thead>
<tr>
<th>Step</th>
<th>Cigarette Use</th>
<th>Nicotine Withdrawal Symptoms</th>
<th>Fagerström Test of Nicotine Dependence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 4</td>
<td>Very Severe</td>
<td>&gt;40/day</td>
<td>Constant</td>
</tr>
<tr>
<td></td>
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<td>Time to first cigarette 0-5 min</td>
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<tr>
<td>Step 2</td>
<td>Moderate</td>
<td>6-19/day</td>
<td>Frequent</td>
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<td>Time to 1st cigarette 31-60 min</td>
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<tr>
<td>Step 1</td>
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<td>Time to 1st cigarette &gt;60 min</td>
<td></td>
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<tr>
<td>Step 0</td>
<td>Non-daily/Social</td>
<td>Social settings only</td>
<td>None</td>
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</table>

If chronic medical or psychiatric disease, escalate severity by 1-2 steps

Adapted from ACCP Tobacco Dependence Treatment Toolkit 3rd Edition, 2010
Recommend

- Base treatment intensity on
  - Severity of underlying disease.
  - Prior experience with tobacco dependence treatment
  - Combination therapy is more effective than single agent therapy.
Stepwise Approach to Treatment

<table>
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<tr>
<th>Step 0</th>
<th>Step 1</th>
<th>Step 2</th>
<th>Step 3</th>
<th>Step 4</th>
<th>Step Down/Maintenance</th>
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**Controller:**
- None
- Nicotine patch or Bupropion SR
- Varenicline
- OR
- Reliever as needed

**Controller:**
- Nicotine patch or Bupropion SR
- OR
- Varenicline
- OR
- Reliever as needed

**Controller:**
- Varenicline + Bupropion SR
- OR
- Nicotine patch + Bupropion
- AND
- Reliever as needed

**Controllers:**
- Varenicline and/or Bupropion-SR
- AND/OR
- High Dose Nicotine Patch
- AND
- Multiple reliever medications

**When withdrawal is controlled**
- Step Down medications,
- Monitor, to ensure withdrawal symptoms are controlled.

- Step Down/Maintenance
Freedom from Tobacco Action Plan

*In the green and good to go!*

Tobacco use is more than a habit. It’s an addiction.

I have no real cravings for tobacco. I’m pretty calm. I feel like my brain can focus normally.

I use medicine to control nicotine cravings every day.

- **Nicotine patch:** ______ mg patch ______ # patches, apply once daily.
- **Bupropion IR, SR, XL (Wellbutrin® or Zyban®):** ____mg/day once daily for first ___ days, then ________________
- **Varenicline (Chantix ®):**
  - Use Starter Pack as directed
  - Use continuing month pack, ___ mg tab, ____ times per day
- **Use prior to problem times:** _____________________________________

*Yellow, but not so mellow.*

I’m craving tobacco. I may be feeling irritable, anxious, and restless.

It is hard for me to get my brain to focus.

Continue your Green zone EVERY DAY Medicine

**Need a rescue? Take a quick-relief nicotine medicine:**

- **Gum**
- **Lozenge**
- **Nasal Spray**
- **Inhaler**

Take _________(dose) every ________ minutes as needed.

*Seeing red.*

I am feeling strong cravings for tobacco. I really need a cigarette now. It may be very hard to get my brain to focus.

In the RED ZONE, take a quick-relief nicotine medicine.

Take _________(dose) every ________ minutes as needed.  
- **Gum**
- **Lozenge**
- **Nasal Spray**
- **Inhaler**

Continue your Green zone EVERY DAY Medicine.
If you are in the red zone, contact your physician or tobacco dependence treatment specialist. You may need stronger medicine
Monitor

- Adherence to treatment
- Effectiveness of treatment
  - Control of nicotine withdrawal
  - Lapses in tobacco use
- Side effects of treatment
Revise

- What changes to the tobacco dependence treatment plan are needed.
  - Step Up?
  - Step Down?
  - Stay the same?

*Duration of therapy is base on control of the underlying disease -- not a fixed schedule.*
Reduction toward cessation

- Use nicotine patch to reduce smoking and prepare for cessation
- Use of NRT to gain greater control of smoking behavior
Nicotine Replacement Safety

- NOT one smoker has died from therapeutic nicotine since its approval in 1984.
- In that time over 8 million smokers have died from the effects of tobacco.
- NRT is underutilized by physicians and by the patients who could benefit from them.
Relievers

- Nicotine Gum (OTC) (2 mg and 4 mg)
  - Chew slowly until a slight tingling or a peppery taste
  - Then place between the cheek and the gum until the peppery taste or tingling is gone.
  - Proper technique is important.
    - Swallowed nicotine can cause nausea and hiccups.
Relievers

- Nicotine Lozenge (OTC) (2 mg and 4 mg)
  - Place between cheek and gum and allow to dissolve
  - Allowed to dissolve slowly over a 20-30 minute period
  - Do NOT swallow lozenge.
  - Do not place under tongue
    - excess saliva will lead to swallowed nicotine and GI side effects.
Relievers

- Nicotine oral inhaler (Rx)
  - Nicotine is absorbed across oral mucosae
  - Side effects (cough, sore throat) increased by deep inhalation
Relievers

- **Nicotine Nasal Spray (Rx)**
  - Nicotine reaches the bloodstream faster
  - It has an impact more similar to the cigarette than other forms of nicotine replacement.
  - May cause mild burning of nasal mucosa
E-cigarette: NOT RECOMMENDED

- FDA analysis found **carcinogenic and toxic** substances in the vapor of these devices
- Vapor **contains anti-freeze**
- An “introductory” product to get kids hooked.
- Use of flavorings (chocolate, strawberry and mint) is designed to appeal to young people
Controllers

- Nicotine Patch (OTC)
  - Step 1 (21 mg)
  - Step 2 (14 mg)
  - Step 3 (7 mg)
    - May cause vivid/bizarre dreams, insomnia
      remove before bedtime.
    - May cause skin irritation
    - Adjust dose to effect
Controllers

- Bupropion SR (Rx)
- Contraindicated if seizure disorder
- More effective when used in combination with NRT.
Controllers

- Varenicline (Rx)
  - Nicotine receptor partial agonist/antagonist
  - Note black box warning on suicide risk
    - Need to differentiate inadequately treated nicotine withdrawal
Case example

- Adult, female
- She smokes 15 cigarettes/day
- First cigarette of the day ~31 minutes after awakening
- Began smoking at age 14
- Fagerström Test for Nicotine Dependence (FTND) score of 5/10 points
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Time to first cigarette 0-5 min | Constant | 8-10 |
| **Step 3**  
**Severe** | 20-40/day  
Time to 1st cigarette: 6-30 min. | Constant | 6-7 |
| **Step 2**  
**Moderate** | 6-19/day  
Time to 1st cigarette 31-60 min. | Frequent | 4-5 |
| **Step 1**  
**Mild** | 1-5/day  
Time to 1st cigarette >60 min. | Intermittent | 2-3 |
| **Step 0**  
**Non-daily/Social** | Social settings only | None | 0-1 |

If chronic medical or psychiatric disease, escalate severity by 1-2 steps.

Adapted from ACCP Tobacco Dependence Treatment Toolkit 3rd Edition, 2010
### Stepwise Approach to Treatment

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#### Controllers
- **Controller:** Nicotine patch or Bupropion SR
- **Controller:** Varenicline + Bupropion SR
- **Controller:** High Dose Nicotine Patch
- **Controller:** Multiple reliever medications

#### When withdrawal is controlled
- Step Down medications
- Monitor to ensure withdrawal symptoms are controlled
Not ready to quit yet

- Discuss “5Rs”.
  - relevance, risks, rewards, roadblocks, repetition
- Individualize to age appropriate and personally relevant.
“I had given up hope of ever quitting until our discussion (of effective pharmacotherapy of tobacco dependence)”

- Parent of a child with asthma and recurrent pneumonia
Smoking in Adolescents

- Driven by
  - relationships
  - activities
  - positive and negative emotions
  - social ramifications
  - images/role models

- Can rapidly progress to frequent smoking/addiction.
Most of what is known about tobacco dependence treatment is from studies of adults

- Behavioral interventions have limited benefit
- Pharmacologic therapies are effective
- Combination therapies increase effectiveness
- Medication can be titrated to control nicotine withdrawal
Approach to adolescent smokers:

Assess whether the adolescent smokes or has tried smoking.

If yes
- Assess readiness to quit.
- Assess other substance abuse.

If no
- Encourage to make a commitment to being a non-smoker
Adolescent is ready to quit

- Assess
  - Level of tobacco dependence
    - Modified Faegerstrom Tolerance Questionnaire
    - Hooked on Nicotine Checklist
  - Social and psychological factors
    - Role of smoking in their life
  - Patterns of smoking
  - Triggers of tobacco smoking
  - Coping skills
Adolescent is ready to quit

- Assess
  - Level of tobacco dependence
  - Social and psychological factors (role of smoking in their life).
  - Patterns of smoking,
  - Triggers of tobacco smoking
  - Coping skills.

- Recommend
  - Appropriate pharmacotherapy
  - Coping strategies
  - Develop Written Action Plan.
  - Set quit date.
Adolescent is ready to quit

- **Assess**
  - Level of tobacco dependence
  - Social and psychological factors (role of smoking in their life).
  - Patterns of smoking
  - Triggers of tobacco smoking
  - Coping skills.

- **Recommend**
  - Appropriate pharmacotherapy
  - Coping strategies
  - Develop written tobacco cessation action plan.
  - Set quit date.

- **Monitor**
  - Frequent follow-up is needed.
Adolescent is ready to quit

- **Assess**
  - Level of tobacco dependence
  - Social and psychological factors (role of smoking in their life).
  - Patterns of smoking.
  - Triggers of tobacco smoking.
  - Coping skills.

- **Recommend**
  - Appropriate pharmacotherapy.
  - Coping strategies.
  - Develop written tobacco cessation action plan.
  - Set quit date.

- **Monitor**
  - Frequent follow-up is often needed.

- **Revise**
  - How is the plan working, what changes are needed?
Adolescent is not ready to quit

- Discuss “5Rs”.
  - relevance, risks, rewards, roadblocks, repetition
- Individualize to personally relevant.
  - Bad breath, yellowed fingers, smelly clothes.
- The benefits of quitting
  - Better performance in sports
  - Money saved
- Contact information for tobacco cessation resources and quitlines
  - 1 800 QUIT NOW = 1 800 NO BUTTS in CA
Policies to decrease adolescent smoking

- Ban advertising for tobacco products*
- Reduce pro-tobacco depictions in media*
- Ban tobacco product sales from vending machines
- Increase tax on tobacco products*
- Develop anti-tobacco advertising*
- Enforce laws prohibiting youth from purchasing tobacco products*
- Ban smoking in indoor public places and outdoor public events*
- Ban introductory products (flavored tobacco, etc.)

Other Goodies in Toolkit

- Discussion of Coding and Billing, so physicians can obtain fair compensation
- Sample insurance appeal letter

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Other Goodies in ACCP Toolkit

- Assessment tools
- Management tools
- Charting and reporting tools
- Slide sets discussing toolkit principles

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Other Goodies in ACCP Toolkit

- Discussion of advocacy principles for smoke free communities
- Discussion of policy recommendations for smoke free kids.

http://tobaccodependence.chestnet.org
Conclusions:

- Tobacco dependence is not just a bad habit
  - It is a severe addiction
- The most effective tobacco dependence treatments involve
  - Use of medications
  - Goal is to control nicotine withdrawal and allow the patient to feel normal
Conclusions:

- Intensity of initial pharmacotherapy is based on disease severity
- Adjustment of pharmacotherapy is based on disease control
- Green/yellow/red zone plans can be used
Conclusions

- In contrast to asthma
  - The person who needs treatment may not be not your patient
- To control the child’s asthma, treatment of the caregivers tobacco dependence is essential
Conclusions

- Pediatricians should be knowledgeable about treatment of tobacco dependence and should consider offering effective treatment to tobacco dependent parents.

- If you are not prescribing treatment yourself, at least show them the way and refer to appropriate treatment resources.
American College of Chest Physicians
Tobacco Dependence Treatment Toolkit

http://tobaccodependence.chestnet.org

Available Soon